LIFE SCIENCES

GRADE 11

TERM 1 TEST

TOTAL: 90

TIME: $1\frac{1}{2}$ hours

Instructions and information:

1. This paper consists of 7 pages and 3 questions.
2. This paper consists of Section A (25 marks) and Section B (65 marks).
3. Start each section on a NEW page.
4. Number the answers correctly according to the numbering system used in this question paper.
5. Leave ONE line between two sub questions, for example between question 2.1 and 2.2.
6. Write neatly and legibly.

GOOD LUCK!!

SECTION A:

QUESTION 1:

1.1 Various options are provided as possible answers to the following questions. Choose the correct answer and write only the letter (A to D) next to the question number (1.1.1 to 1.1.5) in your ANSWER BOOK, for example 1.1.1 A

1.1.1 All viruses are:

A) Prokaryotes

B) Unicellular and pathogens

C) Cellular in structure

D) Acellular and non-living

1.1.2 The following is a list that describes micro-organisms.

They:

i - Play a significant role as decomposers

ii - Are the major pathogens of humans

iii - Are obligate parasites

iv - Reproduce within cells

Which of the following are of biological importance to viruses?

A) i, ii and iii

B) ii, iii and iv

C) i, iii and iv

D) ii and iv

1.1.3 Some bacteria are pathogens because they:

A) Cause disease

B) Are prokaryotic organisms

C) Feed on dead organisms

D) Live symbiotically in the intestine of mammals

1.1.4 Gymnosperms are:

A) Non-vascular seed plants

B) Seed-bearing vascular plants

C) Vascular flowering plants

D) Seedless vascular plants

1.1.5 Frow which part of a flower does a fruit develop?

A) Corolla

B) Anther

C) Pistil

D) Calyx

[2 x 5 = 10]

1.2 Give the correct **biological term** for each of the following descriptions. Write only the term next to the question number (1.2.1 to 1.2.5) in your ANSWER BOOK

1.2.1 Very small life-forms that cannot be seen with the naked eye.

1.2.2 A nutritional relationship in which two different organisms live together.

1.2.3 Cells that fuse to form a zygote.

1.2.4 Animals that remain to a substrate most of their life.

1.2.5 The collective name for a stigma, style and ovary.

[5]

1.3 Indicate whether each of the statements in COLUMN I applies to **A ONLY**, **B ONLY**, **BOTH A AND B or NONE** of the items in COLUMN II. Write **A only**, **B only**, **both A and B,** or **none** next to the question number (1.3.1 to 1.3.5) in the ANSWER BOOK.

COLUMN I	COLUMN II
1.3.1 Comma – shaped bacteria	A – Bacilli
	B – Cocci
1.3.2 *E. coli* make vitamin K in the gut of humans	A – Commensalism
	B – Mutualism
1.3.3 Microbes which cause disease	A – Vector
	B – Pathogen
1.3.4 Passes genetic info onto future generations	A – Asexual reproduction
	B – Sexual reproduction
1.3.5 This type of reproduction occurs by breaking off	A – Budding
	B – Binary fission

[2 x 5 =10]

TOTAL SECTION A: [25]

SECTION B:

QUESTION 2:

2.1 Use the information in the table below to answer the questions that follow.

Region	Number of cases (1000s)	Number of deaths(1000s)
Africa	3 900	430
The Americas	350	20
Eastern Mediterranean	1 000	99
Europe	560	62
South-East Asia	4 900	480
Western Pacific	2 900	240
Global total	14 000	1 300

The table above shows the number of cases of TB and the number of deaths from TB around the world in 2009.

2.1.1 Draw a bar graph using the data for each country in the table above to show the number of cases of TB in 2009. (6)

2.1.2 Work out the percentage of cases and deaths in each country as percentages of the global total. Draw a table to show your results. (6)

2.1.3 Which region had the highest number of cases of TB in 2009? (1)

2.1.4 Which region had the lowest number of cases of TB in 2009? (1)

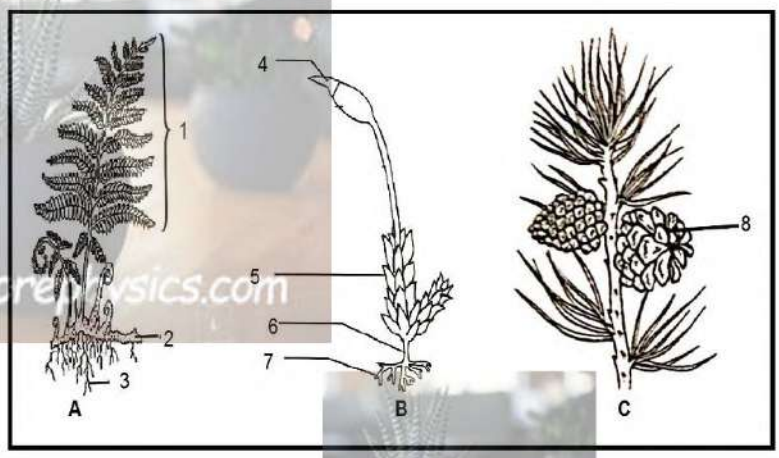
2.1.5 Why do you think that the Americas and Europe have such a small number of cases of TB compared to the other countries in the table? (1)

2.1.6 Name the dependent variables. (2)

2.1.7 Name the independent variable. (1)

[18]

2.2 Study the diagrams below and answer the questions that follow.



2.2.1 Identify the plant group under which A and C are classified. (2)

2.2.2 Give the name of the structure that develops from the germinated spore of plant A. (1)

2.2.3 Explain why plant C is not dependent on water for fertilization. (4)

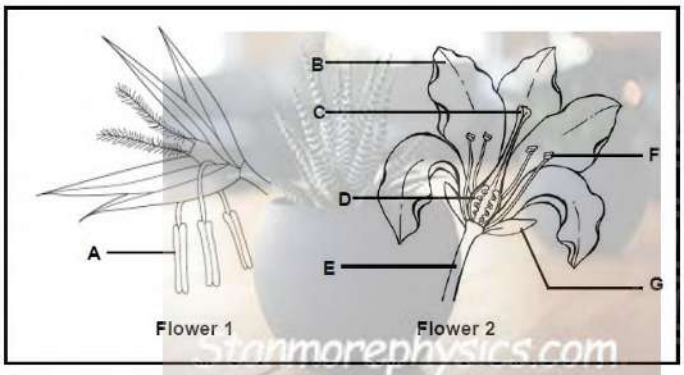
2.2.4 Provide labels for parts 3, 7 and 8. (3)

2.2.5 Name TWO differences between plant A and plant C with relation to reproduction. (4)

2.2.6 Give one reason why seeds are better than spores. (1)
[15]

QUESTION 3:

3.1 Study the diagram of the two flowers below and answer the questions that follow.



3.1.1 Name the division/taxa to which flowering plants belong. (1)

3.1.2 Supply labels for:

a) Structure **A** (1)

b) Whorl **B** (1)

c) Structure **C** (1)

3.1.3 Give the LETTERS of the parts of **Flower 2** that will drop off soon after fertilisation has occurred. (2)

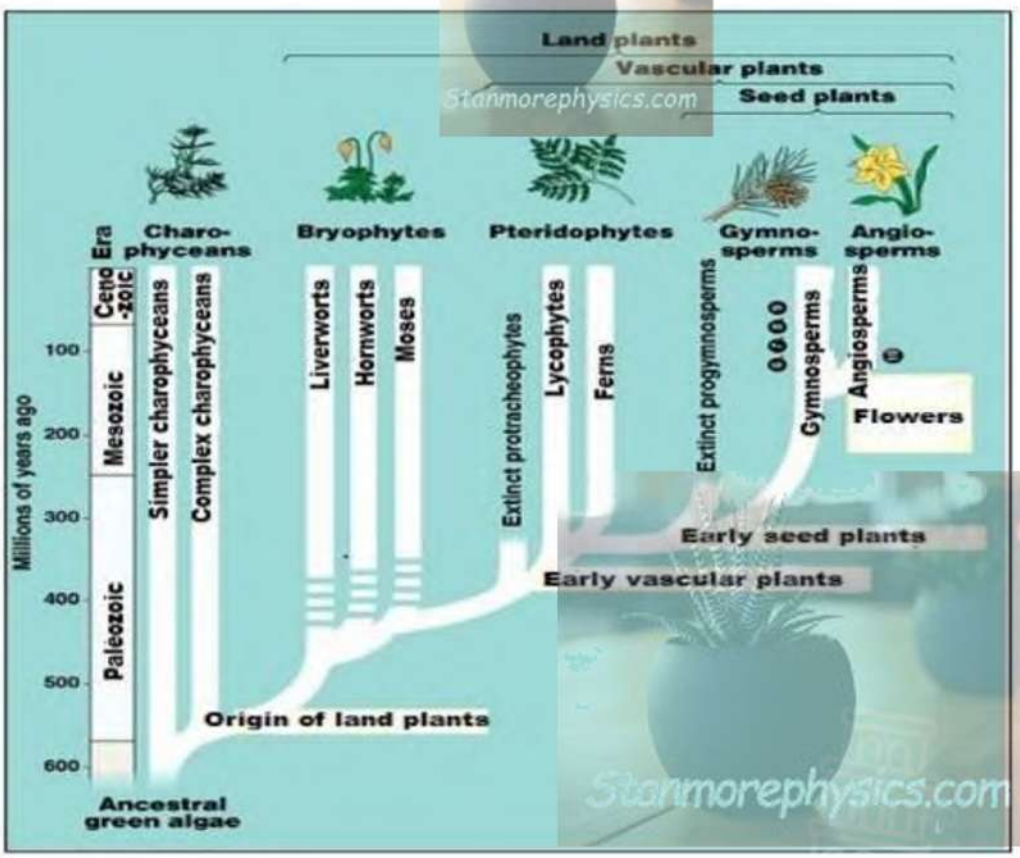
3.1.4 Which flower (**1** or **2**) above, is wind pollinated? (1)

3.1.5 Give TWO visible reasons for your answer in QUESTION 2.3.4. (2)

3.1.6 Name TWO unique features of flowering plants that have allowed them to become the dominant plant species on Earth. (2)

[11]

3.2 The diagram below represents a phylogenetic tree of different groups of plants. Study the diagram and answer the questions below.



3.2.1 According to the phylogenetic tree, which plant appeared first on Earth? (1)

3.2.2 In which era did the first Angiosperms appear? (1)

3.2.3 Which characteristics separate the Bryophytes from the Charophyceans? (1)

3.2.4 How lang ago did the Progymnosperms become extinct? (2)

3.2.5 Tabulate TWO differences between Gymnosperms and Angiosperms with regards to reproduction. (5)

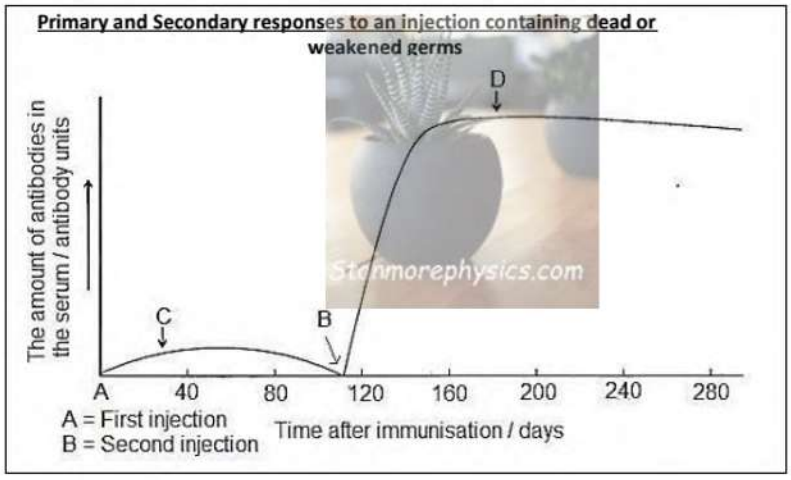
3.2.6 Which plants, mosses or Angiosperms are more closely related to Gymnosperms? (1)

3.2.7 Explain your answer to QUESTION 3.2.6. (2)

3.2.8 Angiosperms undergo sexual and asexual reproduction. Explain TWO advantages of sexual reproduction for survival of plants. (4)

[17]

3.3 Study the graph below, which shows the body's response to a vaccination given by an injection and a booster injection and answer the questions that follow.



3.3.1 Mention TWO common ways of receiving vaccines. (2)
3.3.2 Which cells in the immune system produce the antibodies? (1)
3.3.3 What happened to the antibody level after the first injection? (1)
[4]

GRAND TOTAL: 90

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TERM 1 TEST 1 MEMORANDUM

Question 1:

1.1.1 D ✓✓

1.1.2 B ✓✓

1.1.3 A ✓✓

1.1.4 B ✓✓

1.1.5 C ✓✓ (10)

1.2

1.2.1 Micro – organisms ✓

1.2.2 Symbiotic / symbiosis ✓

1.2.3 Gametes ✓

1.2.4 Sessile ✓

1.2.5 Pistil ✓ (5)

1.3

1.3.1 None ✓✓

1.3.2 B only ✓✓

1.3.3 B only ✓✓

1.3.4 Both A and B ✓✓

1.3.5 A only ✓✓ (10)

Question 2:

2.1

2.1.1 **Rubric for assessment of the graph:**

Criteria	Mark allocation
Correct type of graph (T)	1
Caption for graph (C) (both variables)	1
Correct label for X-axis Correct label and unit for Y-axis (L)	1
Equal width and interval of bars Correct scale for Y-axis (S)	1
Used a key (K)	1
Drawing of bars (P)	1: 1 to 6 bars drawn correctly 2: All 6 bars drawn correctly

(6)

2.1.2

Region	Number of cases (% of total)	Number of deaths (% of total)
Africa	27.86	33,08
The Americas	2,50	1,54
Eastern Mediterranean	7,14	7,62
Europe	4,00	4,77
South-East Asia	35,00	36,92
Western Pacific	20,71	18,46

(6)

2.1.3 South – East Asia ✓ (1)

2.1.4 The Americas ✓ (1)

2.1.5 Developed countries ✓/ good health infrastructure ✓ (1)

2.1.6 Number of cases ✓

Number of deaths ✓ (2)

2.1.7 Region ✓ (1)

(18)

2.2

2.2.1 A – Pteridophytes ✓

B – Gymnosperms ✓ (2)

2.2.2 Prothallus ✓ (1)

2.2.3 Male gamete / pollen grain ✓ are dispersed by wind ✓ to the female cones ✓ where they fertilise the exposed ova ✓ (4)

2.2.4 3 – Roots✓

7 – Rhizoid ✓

8 – Female cone ✓ (3)

2.2.5 A – needs water✓ no seeds ✓

C – doesn't need water ✓ spores and seeds ✓ (4)

2.2.6 Tough coat prevent seeds from drying out / seeds can remain dormant longer than spores ✓ (1)

(15)

Question 3:

3.1

3.1.1 Angiosperms ✓ (1)

3.1.2 a) Anther ✓ (1)

b) Corolla ✓ (1)

c) Stigma ✓ (1)

3.1.3 B, C, F, G (1 – 3 correct) ✓ (all 4 correct) ✓✓ (2)

3.1.4 1 ✓ (1)

3.1.5 Their stigmas are large / feathery ✓

The stamens are long ✓

Anthers are large ✓

(Any TWO) (2)

3.1.6 Fruit ✓

Flowers ✓ (2)

3.2 (11)

3.2.1 Green algae ✓ (1)

3.2.2 Mesozoic ✓ (1)

3.2.3 Bryophytes are land plants ✓ (1)

3.2.4 248 – 250 ✓ million years ago ✓ (2)

3.2.5

Gymnosperms	Angiosperms
Naked seeds	Seeds are enclosed in an ovary
Bear cones	Bear flowers
Seed dispersal by wind only	Seed dispersal by various agents
Wind pollination only	Wind and animal pollination

(Any 2 + 2 + 1 Table) (5)

3.2.6 Angiosperms ✓ (1)

3.2.7 Angiosperms and Gymnosperms ✓ share a more recent common ancestor ✓

OR

Both ✓ bear seeds ✓ (2)

3.2.8 - genetic variation ✓

- able to adapt and withstand changes in environmental conditions ✓

- seeds are surrounded by a layer ✓

- for protection and survival ✓ (4)

(17)

3.3

3.3.1 Orally ✓

Injection ✓ (2)

3.3.2 Leucocytes ✓ (1)

3.3.3 It increased slowly up to day 50 where it is at its highest and then started to decrease ✓ (1)

(4)